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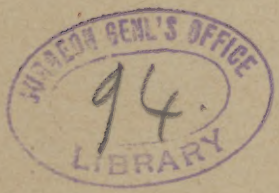

CERTAIN ASPECTS OF GONORRHŒA IN WOMEN.

By CHARLES P. NOBLE, M.D.,
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Gonorrhœa in women is such a broad subject, and one of such great practical importance, that in this paper I shall not attempt to cover the whole of it, but shall confine myself to certain points in its natural history and treatment. Prior to 1873, when Noeggerath published his celebrated paper, our knowledge of the natural history of the disease was very incomplete, and no adequate conception of the relation of gonorrhœa to endometritis, salpingitis, and peritonitis existed. Fortunately for medicine and for humanity, Noeggerath took a most radical position with reference to the serious nature of gonorrhœa in women, and especially in regard to its relation to chronic pelvic inflammation and to sterility. His apparently exaggerated conclusions naturally forced the subject upon the attention of the profession, and since that time our knowledge of it has been growing steadily, until now it is quite satisfactory, although far from complete.

Gonorrhœa of the Uterine Appendages and Peritoneum.—An interesting phase of gonorrhœa in women is the invasion of the womb, Fallopian tubes, ovaries, and the peritoneum. It has long been known that this extension of the disease does occur, and very exact observations were made forty years ago by Bernutz concerning the manifestation of the disease in the uterine appendages, but the real frequency of this form of gonorrhœa was not appreciated until demonstrated by the daily work of the modern abdominal surgeon.

The following case well illustrates this phase of gonorrhœa:

Mrs. X., aged twenty-one, mother of one child, consulted me in June, 1891, having a relaxed vaginal outlet, a lacerated cervix, and a vaginal cyst behind the cervix. She had no vaginal catarrh, nor was there a history of any. She was admitted to hospital July 24th, and the cyst was removed and the cervix repaired. She was discharged August 7th, and abstained from sexual intercourse for a month. On the 10th of October she consulted me for leucorrhœa and irritation about the vulva. Examination revealed nothing. On the 24th the left vulvo-vaginal gland was found inflamed but not suppurating, and an acute endometritis existed. October 29th the inflammation spread to the peritoneum and a moderately severe pelvic peritonitis followed. The evidences of pus-formation increased, and on November 9th her condition was such as to necessitate cœliotomy. Both Fallopian tubes contained creamy pus, and in addition a localized abscess was found to the left of the sigmoid flexure and extending down into the pelvis, containing several ounces of pus. With irrigation and drainage she recovered. The husband confessed to me that while his wife was in the hospital he contracted gonorrhœa (a mild case) and that he infected her.

Here was a woman, free from genital catarrh, who contracted gonorrhœa of the cervix and vulvo-vaginal gland, with little if any involvement of the vagina. It spread promptly to the tubes and caused a large collection of pus within the peritoneum. Unfortunately the pus was not examined bacteriologically, but clinically the occurrence of an intra-peritoneal abscess as the result of gonorrhœa is clear.

How the disease spreads to the Fallopian tubes, ovaries, and peritoneum is yet in dispute. Before the discovery of the gonococcus of Neisser it was sufficient to say that catarrhal inflammation spread by "continuity of tissue." But this gross statement is no longer satisfactory. After the discovery of Neisser's coccus it was assumed that the spread of the disease to the tubes, ovaries, and peritoneum was due to the invasion of this coccus. The earlier studies of the nature of the gono-

coccus, especially by Bumm, were opposed to this assumption in its entirety, the exceptions being explained by the theory of "mixed infection." From experiments made by Bumm it was maintained that the gonococcus is incapable of inducing peritonitis, and also that it does not invade the deeper layers of the mucous membrane, the underlying tissues, or the lymphatics. The correctness of this theory is open to suspicion, because it does not explain the conditions found by the clinician, who is inevitably driven to the conclusion that the theory is based upon insufficient or misinterpreted evidence.

Gonorrhœal peritonitis, gonorrhœal ovaritis and ovarian abscess, and gonorrhœal rheumatism involving various joints, have been and are accepted as facts by clinicians; but according to Bumm's teaching concerning the gonococcus these conditions are denied or are incapable of explanation. The fallibility of Bumm as an observer is supported by his teaching concerning the frequent relation between gonorrhœa and parametritis, the occurrence of which he explains by the theory of mixed infection. Certainly the combined testimony of English and American gynecologists goes to show that parametritis is an extremely infrequent complication of gonorrhœa—observers of the widest experience denying its existence apart from the puerperal state.

The more recent studies of Wertheim[1] have led him to conclusions which agree with clinical experience. He was able to demonstrate that the gonococcus will produce peritonitis in white mice. As the mucous membranes of white mice are refractory to gonorrhœa, while those of man are susceptible, he argues that this fact goes far to show that the gonococcus can produce peritonitis in man. He has demonstrated also that the gonococcus can penetrate pavement as well as cylindrical epithelium. He claims that the gonococcus can penetrate the connective tissue and infect the lymphatics, and thus cause peri-urethral abscess, suppurating lymphatic glands, etc.

[1] Proceedings of the German Gynecological Society, 1891.

Moreover, Wertheim has demonstrated gonococci in the pus from ovarian abscess.

These observations of Wertheim are more nearly in accord with the known clinical history of the disease (illustrated in the case reported), and are further supported by the fact that he and other observers, including Sinclair, lay stress upon the statement that other pyogenic bacteria are seldom found in tubal pus (Wertheim has found only the gonococci).

The result of the observations of Wertheim is very gratifying, confirming, as they do, Neisser's claim that the gonococcus is the specific cause of gonorrhœa, while harmonizing the experience of clinicians and bacteriologists concerning the disease. If Wertheim's observations are confirmed, gonorrhœal ovaritis and abscess, peritonitis, and rheumatism receive a satisfactory bacteriological explanation.

Non-cystic Gonorrhœal Salpingitis.—Nothing in the history of gonorrhœa is better established than the essential chronicity of the disease. In the urethra, the vulvo-vaginal glands, the vagina, the uterus, and the Fallopian tubes, the general facts are the same—the disease has little if any tendency to undergo a spontaneous cure. The rule is that a chronic catarrhal condition succeeds the acute inflammation (if the disease has not been chronic or "creeping" from the beginning), and that in some fold of membrane, crypt, or follicle enough of the specific poison remains to set up acute inflammation anew. The knowledge of this fact we owe to Noeggerath more than to any other; but each practitioner learns to know it from his own observations. And not only is the disease essentially chronic in its nature, but it is very rebellious to treatment. Even where the affected membrane is accessible, as in the urethra and vagina, after a long and systematic employment of germicides and astringents the practitioner is chagrined to find a recurrence of acute inflammation. And this is even more true where the comparatively inaccessible endometrium is involved.

The natural history of tubal gonorrhœa is still somewhat

unsettled. Does gonorrhœal salpingitis ever result in a perfect natural cure with a functionally active tube? This is a point of the utmost importance because of its bearing on the proper treatment of the class of cases in which we have gonorrhœal salpingitis with but slight symptoms, and the class who have survived acute salpingitis with peritonitis and who have chronic salpingitis with adherent appendages. The known chronicity of the disease, and its rebelliousness to treatment in accessible regions, offer but little encouragement to expect a perfect cure in an inaccessible tube from which drainage is difficult, if not impossible. But the question is of such vital interest that facts, and not mere theoretical considerations, are needed to determine it. Personally I know of no case in which a gonorrhœal salpingitis has been perfectly cured. Perhaps this question will be determined definitely by those who are freeing adherent appendages instead of removing them after performing abdominal section. If it can be settled in the affirmative it will enable conscientious men to advise all manner of palliative treatment in such conditions in the hope of effecting a cure. In the meantime I believe that the rule of practice should be to remove all such uterine appendages when the health of the patient is compromised by their presence. At the present time there is no evidence that a Fallopian tube occluded at the fimbriated extremity ever becomes patulous; and there is every reason to believe that gonorrhœal salpingitis invariably produces occlusion of the tube, except in those cases where the infection spreads quickly to the peritoneum and induces rapidly fatal peritonitis.

Shall Both Uterine Appendages be Removed when only One is Infected with Gonorrhœa?—The rule in ovariotomy for cystoma, that the opposite ovary should not be removed if found healthy, has been applied to the operation of removing the Fallopian tube and ovary for inflammation. Tait has called attention to the fact that in a considerable percentage of such cases the inflammation spread subsequently to the opposite side, causing death or requiring a second operation.

Confirmatory testimony has been offered by others. Hence the conclusion can be drawn safely that when one tube has been removed for inflammation the disease is likely to attack the other subsequently. The subject is as yet so new that we have no evidence as to the relative frequency with which this has occurred in cases of gonorrhœal salpingitis as compared with other varieties of salpingitis, but from what is known of the disease in question the inference is fair that the healthy tube is most apt to be infected in gonorrhœal cases. Probably our knowledge of the subject is as yet not definite enough to formulate a rule of practice.

In operating upon women who are mothers of families, and are approaching the menopause, it is certainly wise surgery to remove both uterine appendages, even though one is healthy. With young women desirous of bearing children it seems to me that, the facts being stated, the women themselves should elect whether one or both tubes should be removed, as they alone must suffer the consequences of success or failure.

Probably the percentage in which extension to the healthy side will occur can be materially reduced by appropriate treatment. When life is not threatened, careful preparatory vaginal treatment will do much in this direction by curing a lurking vaginitis. When endometritis is marked, rest in bed until recovery is perfect from the cœliotomy, followed by thorough dilatation, curetting, and disinfection of the endometrium, should likewise lessen the chances of infection by curing the endometritis. Among intelligent people such measures, together with prolonged treatment to restore tone to the pelvic vessels, rational personal hygiene, and the avoidance of exposure, exhaustion, sexual intercourse, and other causes of pelvic congestion, should go far to prevent involvement of the remaining tube.

DISCUSSION.

Dr. Chauncey D. Palmer, of Cincinnati.—Gonorrhœa, as we all know, is a mean disease. It is a mean disease in the male, but it is a meaner disease in the female, because of its terrible persistency and its tendency to extend. These are the characteristic features which show the difference between gonorrhœal inflammation of the mucous membrane and ordinary inflammations arising from ordinary causes in the same tract. One tends toward a spontaneous cure while the other extends and continues indefinitely. I think that Dr. Noeggerath was right in the views enunciated in his paper a number of years ago. If I modified his paper at all, I would say that he exaggerated somewhat the inevitable tendency of the disease to persist, for I believe that some patients do recover in a few months, or in a few years get well by treatment or spontaneously, but some never get well. There is no disease with which we have to contend that is more apt to persist indefinitely than gonorrhœa. I do not believe that gonorrhœa in the male ever induces death; I have never seen it do so. It is very apt indeed to induce organic changes in the urethra, vas deferens, and even the testicle, leading to sterility, but I have never known it to cause death. I have known it, however, to cause death in two cases in the female.

There is no question that the endometrium is more sensitive than the mucous membrane of the vagina to the gonorrhœal poison, because of its ciliated epithelium. Gonorrhœa may start anywhere in the vagina, extend to the vulvo-vaginal glands, involving in turn the endometrium, the tubes, the serous covering of the ovary and pelvic peritoneum. Rarely does it extend further than the peritoneum of the pelvis; but it may involve the general abdominal peritoneum also, as the following case will illustrate. Within the past three months I treated a married lady who had contracted a vaginal and endometrial gonorrhœa, probably from her husband. The inflammatory action had extended to, and seemed limited within, the pelvic peritoneum. She was doing well, with a temperature reduced to normal, when

suddenly the general peritoneum became implicated, the disease was uncontrollable, and she died.

Gonorrhœa may also extend through the urinary tract as well as the genital tract. The following case I was enabled to follow from beginning to end:

A young lady, in good health, married a young man of questionable reputation. She consulted me at my office, when she had gonorrhœal vaginitis, some endometritis, and slight salpingitis. For some reason the disease ceased to extend further in this direction, when the urethra and the bladder received the impress. A urethritis became a cystitis, then a ureteritis, then a pyelitis, and, finally, a pyelo-nephritis terminated her life, after months of such symptoms and signs as are usually noticed from this last-named disease. After months of an albuminuria, with more or less urinary suppression, she died, not in convulsions, but in uræmic coma. This case possessed unusual interest for me at the time, because of its extreme rarity, especially in a young woman who had since childhood enjoyed excellent health. There may be those here who regard this explanation of the kidney disease in this case as improbable or impossible, but after full consideration there is no other explanation plausible to me.

Dr. Maury, of Memphis.—One point which attracted my attention in this excellent paper is the question which the author raised as to the curability of gonorrhœal salpingitis. I have been inclined to accept nearly all that Noeggerath has taught on this subject, and the question of curability is one which I have tried to solve by long-continued clinical observation. I cannot say that I have settled it, by any means. One reason why I would like to settle it is presented in the following case: A few days before coming to Brooklyn I saw a young lady who was married about six months ago. She contracted a gonorrhœal salpingitis and pelvic peritonitis from her husband. She has been in bed since the 1st of August, and there are still quite large masses on each side of the uterus in spite of the best treatment. The practical question is, If this is not a curable disease, why not remove the appendages at once? If it is curable, we might perhaps make use of the method which Dr. Polk and others advocate—curette the endometrium and drain, and make still further attempts to save the appendages.

I am not prepared to admit from my own observation that gonorrhœal salpingitis is really incurable. Two cases come to my mind at this moment; one, that of a lady in my circle of acquaintance, who six or seven years ago contracted this form of inflammation from her husband. At one time she suffered a good deal, but was never ill enough to be confined for any considerable time to bed. But now, after the lapse of six or seven years, although sterile, she is in the enjoyment of excellent health. The other patient came to me a few months ago. She was married unhappily, and contracted gonorrhœa from her husband. She had had signs of abdominal trouble, but so far as she knew she had entirely recovered. She separated from her husband, and subsequently became pregnant. She had a miscarriage, induced, following which there was an attack of pelvic inflammation. It was for the relief of the pelvic inflammation that she consulted me. Although there was a swelling at the right of the uterus, great tenderness, and a purulent discharge from the cavity of the uterus, I anæsthetized her, curetted, irrigated, and packed the womb, with good results up to the time when I lost sight of her.

Dr. W. H. Baker, of Boston.—It seems to me that the question of greatest interest in this discussion relates to curability. As I understand Dr. Noble, in his experience he has not known a case of gonorrhœal salpingitis in the female to be cured. The question further arises, What do we call cured? Many of us may be satisfied, and feel that we have cured our patient when we have relieved her of her suffering; when we have made her life of invalidism one of comparative health. But that may not be the idea that Dr. Noble has of cure. I think that it is the experience of abdominal surgeons to find the fimbriated extremities of the tubes adherent when the rest of the tube is free. The fimbriated extremity seems to be the point to first become affected when there is disease of any extent in the tube. It is possible, as Dr. Noble has suggested, that breaking up the adhesions may restore the patency of the tubes. But he says that it has not done so in his experience, and it has not in mine. I look upon the occurrence of gonorrhœal salpingitis upon one side, for instance, as making cure impossible in the sense of restoring that

tube to its normal function. It may be that the other tube may remain unaffected and fertility result in consequence. I do not believe that Dr. Noeggerath overstated the facts in his first paper in speaking of the terrible results following gonorrhœa.

Dr. Edward P. Davis, of Philadelphia.—The question of recovery from gonorrhœa depends, in some degree, upon the power of resistance of the individual to the invading micro-organism. It is a matter of observation, I think, that the higher in the scale the individual is, the less resistance does she show to certain forms of bacteria. Among negroes, for instance, gonorrhœa is frequent, and recovery seems to be complete, for the women often go on bearing children as if they had never had the disease. I recently had occasion to induce labor in a colored woman with contraction of the pelvis, who had at the same time acute gonorrhœa. By proper precautions she was delivered of a living child, although the child afterward had purulent gonorrhœal ophthalmia.

Among newly born infants gonorrhœal infection is common where squamous epithelium exists, and not so common on ciliated epithelium. Hence the greater frequency of this form of inflammation in the eye than in the nose.

Dr. A. J. C. Skene.—Owing to the dangers and frequency of the disease, and the fact that the treatment is far from being well understood, I believe that gonorrhœal infection is more likely to extend from below upward to the uterus and tubes in neglected or imperfectly treated cases. I recognize in practice two forms of gonorrhœa in women—acute and chronic, or an acute gonorrhœa and a subacute gonorrhœa resulting from a latent form of the disease. The latent or subacute form is more likely, I think, to extend to the uterus and tubes, because it causes less suffering and does not drive the patient to the physician immediately.

Regarding extension of gonorrhœa to the ureters and kidneys from the bladder: If the disease really occurs in these organs, I do not believe that it gets there in the same manner in which it extends from the vagina into the uterus and tubes. I do not believe it, because I have seen many cases of inflammation of the bladder, ureters, and kidneys that were not caused by gonorrhœa, and I am not sure that I ever saw one that was. Again, gono-

cocci do not live in urine. They die very promptly when they get into the bladder. Then I fancy they very seldom get there. There is a bar to their entrance into the bladder much more efficient than that hindering their entrance into the uterus. There is a sphincter to exclude them, and when this is relaxed the outflowing stream of urine carries them in the opposite direction if they are present in the urethra. Taking these things into consideration, I would be much more inclined to think that Dr. Palmer's patient got her nephritis from some other cause than from the passage of the gonococci up the ureters. Now, it may be that kidney trouble arises in gonorrhœa in the same way that gonorrhœal rheumatism occurs—a manner that we cannot explain. There may be a gonorrhœal affection of the knee, for instance, but not by direct extension from the mucous membrane of the genitalia.

A word with regard to cure. If the patient is seen before the uterus becomes involved, I think that it may be completely cured. Gonorrhœa has been difficult to cure in the past because of failure in driving it from the vulva, vagina, or even the cervix, by failure to recognize its lurking-place in crypts and follicles from whence it starts on its ravages anew. It takes a great deal of time and trouble to assure oneself that the disease has been completely cured and will not extend to the uterus, etc. After effecting an apparent cure so far as can be judged by the looks of the mucous membrane, one must watch carefully that it does not lurk in some hidden folds. The same difficulty applies in curing this disease as in carrying out disinfection. It is easy enough to sterilize a thing if you can bring your agent in contact with the germs which you wish to destroy. The places most likely to be overlooked in destroying the specific cause of gonorrhœa are the vulvo-vaginal and urethral glands and the mucous membrane behind the cervix. If we could always get our cases early, and see that we not only cured them apparently, but that they remained free, there would be less of endometritis, salpingitis, etc.

As to the question of one's ability to cure gonorrhœa after it has gone beyond the uterus, I shall not discuss it. Certainly the cure then becomes very difficult.

Dr. McLaren.—Several very important questions have been

raised in this paper. One is the relative frequency of gonorrhœal salpingitis and other forms of septic inflammation of the tubes. If I understand Dr. Noble correctly, he takes the position that the great majority of cases of tubal inflammation are gonorrhœal, due to the gonococcus. According to my reading, however, my impression is that operating gynecologists and pathologists have changed their views on this subject, and do not look upon gonorrhœa as the all-prevalent cause of septic inflammation of the tubes and pelvic peritoneum, believing that gonorrhœa is the cause in only about one-fourth of the cases, but that puerperal disease is the chief cause.

It is possible to say that certain women have had gonorrhœa, have become symptomatically cured, and have borne children. Lately I delivered a woman who had had gonorrhœa, as had also her husband; moreover, she had a true salpingitis, with enlargement of the tube to the size of a hen's egg, tenderness and elevation of temperature. I was not permitted to operate; she went on to perfect recovery, and, as I said, bore a child. Dr. Murray lately reported six cases before the New York Obstetrical Society in which women who had salpingitis—whether gonorrhœal or not, I cannot say—bore children at term without septic puerperal trouble.

I think that Dr. Davis is correct in stating that gonorrhœa is not so common nor so virulent in the colored race. I know three colored women who had gonorrhœa and became symptomatically cured.

As to the theory of latent gonorrhœa, I have lost considerable confidence in it. That the gonococcus does disappear after a certain length of time has been proven by the microscope. The idea that because a man has had gonorrhœa and a stricture he must necessarily infect his wife is certainly false. The discharge which comes from the urethra nine months after the initial attack must very seldom, I think, be virulent enough to produce an endometritis and subsequent salpingitis.

Dr. Baldy, of Philadelphia.—I must admit that I have found myself entirely at variance with Dr. Noeggerath with regard to the effects of gonorrhœa on women. I have always believed since reading his early papers that they were the productions of

an enthusiast and that the facts were grossly exaggerated. My daily clinical experience during the past three years has led me to believe this all the more firmly.

I was more than pleased with Dr. Skene's remarks, which expressed thoughts that I had intended to convey. I believe that where the disease affects the uterus, tubes, and peritoneum, it is by direct extension; all the facts go to prove this.

Dr. Skene's remarks upon infection of the urinary tract go to prove that the disease in general is a curable one. I have no more doubt of its curability than of the curability of scarlet fever. I believe with him that if it is not cured it is because the patients apply too late or have been neglected or treated unintelligently. I know that I have cured dozens of women with gonorrhœa, and saved them from the results of complicating pelvic troubles.

As a rule gonorrhœa does not extend to the bladder, yet in one sense this organ is as much exposed as the uterus. The reason why we so rarely see gonorrhœal cystitis is that the urine carries the poison outward, preventing infection. This fact teaches us that gonorrhœa is curable if properly treated. The genital tract must be cleansed and disinfected. The uterus must receive attention, for gonorrhœal endometritis overshadows the vaginitis in importance, and is often of much greater severity. Therefore I give especial attention to the endometrium, making use of the curette, etc. I can recall two or three cases in which the gonorrhœa had involved the uterus, appropriate treatment effected a cure, and the patients subsequently bore healthy children. I use the curette because the infection burrows too deeply to be reached by astringent solutions, which cannot, of course, be rubbed in as they can in the vagina. Following the curettement, I apply at times even a fifty per cent. solution of chloride of zinc.

Where the tubes become infected so that the fimbriated extremity is occluded by exudates, I think that the only remedy is removal of the appendages. If one tube appeared quite healthy I would not do the double operation, for I have not known extension to the second tube in my practice. I do not think, however, that where the inflammation has involved the

tubes it has necessarily destroyed them, or that pregnancy may not take place. I do not believe that so-called conservative surgery as applied to the ovaries and tubes can do any good, for while you may cut out a portion of a diseased organ or break up adhesions, you cannot restore the calibre of the tube or prevent its subsequent occlusion. To proceed as Dr. Polk does in these cases exposes the woman to pelvic infection by the very means which he uses. I do not believe that the tube can be opened and kept patulous.

Dr. Noble.—The discussion has taken a considerably wider range than my paper, and I will, therefore, say something about several points which have been raised. In the first place, as to the relation of gonorrhœa to nephritis and pyelitis. I have found it extremely common for chronic inflammation of the kidneys to exist where there is chronic inflammation in the pelvis. In those cases it has been my opinion that the renal trouble was due to breaking-down of the general health from chronic invalidism. I have also seen acute nephritis as a complication of acute salpingitis and pelvic abscess of recent origin, but there was no proof that the inflammation had extended up through the urethra to the bladder, and thence to the kidneys. I have been inclined to accept the theory generally held, as expressed by Dr. Skene.

As to the curability of the disease, the only question concerns the complete cure of gonorrhœal salpingitis, for all will admit that by proper treatment and keeping the patient under observation sufficiently long a gonorrhœal vaginitis can be cured. But when the disease reaches the tube, where we can treat it more indirectly, the question arises whether it can be removed so thoroughly as to restore the function of the organ. As I stated in the paper, I have never met with such a case of cure, and therefore it has been my custom, if the patient suffers, to operate. As to the symptomatic cure of *chronic* salpingitis of whatever form, I know of only two women who have remained relieved any considerable time without an operation.

I have also noticed a difference in the effect of gonorrhœa upon negroes and white women. It is extremely common to find chronic pelvic inflammation in negroes who still go about attend-

ing to their ordinary duties with very little inconvenience. Of course, where there is pus in the pelvis they are in danger of its escaping and causing fatal peritonitis. But I think there is no question that such diseases affect their general health much less than is the case with the whites.

In my paper I said nothing about the frequency of gonorrhœal salpingitis compared with other forms of salpingitis. I think that it depends much upon the community in which the observations are made, for in some places gonorrhœa is much more common than in others, and in those of degraded life is much more likely to receive treatment.

Where a woman who has had gonorrhœal salpingitis subsequently conceives, the explanation is, I believe, that only one tube was affected. I agree with Dr. Baldy regarding the propriety of opening the tubes which have once been occluded. The likelihood of restoring the tube to its functional activity is very slight compared with the danger of preparing the way by the operation for future peritonitis.